What is claimed is:

1. A method for generating an execution order for a function block diagram having a plurality of function blocks, wherein the function blocks each have one or more inputs, the method comprising:

determining input data availability for the inputs of the plurality of function blocks; and

generating an execution order for the function block diagram according to the input data availability for the inputs of the plurality of function blocks in the function block diagram.

2. The method of claim 1, wherein determining input data availability for the inputs of the plurality of function blocks comprises:

determining that a feedback loop exists in the function block diagram; and

assuming data availability for function blocks in the feedback loop.

3. The method of claim 2, wherein determining that a feedback loop exists in the function block diagram comprises determining whether a localized feedback wire is associated with a function block input in the feedback loop, and wherein assuming data availability for function blocks in the feedback loop comprises assuming data availability for the function block input associated with the localized feedback wire.

4. The method of claim 3, further comprising determining whether an unspecified feedback loop exists in the function block diagram, and generating an error if an unspecified feedback loop exists in the function block diagram.

5. The method of claim 4, wherein determining whether an unspecified feedback loop exists comprises determining that an unspecified feedback loop exists if no localized feedback wire exists in the feedback loop.

6. The method of claim 5, wherein determining input data availability comprises determining whether an extra localized feedback wire exists in the function

block diagram, and generating an error if an extra localized feedback wire exists in the function block diagram.

7. The method of claim 1, wherein generating an execution order for the function block diagram comprises assigning an execution number to each of the plurality of function blocks in the function block diagram.

8. The method of claim 7, wherein the function block diagram comprises an association between an input of a first function block and a second function block, and wherein determining data availability for the plurality of function blocks comprises determining that data is available for the input of the first function block if an execution order number has been assigned to the second function block.

9. The method of claim 1, wherein determining input data availability for the inputs of the plurality of function blocks comprises assuming data availability for a first input of a first function block if the first input is associated with an input reference.

10. The method of claim 9, wherein generating an execution order for the function block diagram comprises assigning an execution number to each of the plurality of function blocks in the function block diagram.

11. The method of claim 10, wherein the function block diagram comprises an association between the first input of the first function block and a second function block, and wherein determining data availability for the plurality of function blocks comprises determining that data is available for the first input of the first function block if an execution order number has been assigned to the second function block.

12. The method of claim 10, wherein assigning an execution number to each of the plurality of function blocks comprises assigning a next available execution order number to the first function block if data is available for all inputs of the first function block.

13. In a controller configuration system, a method for generating a control routine from a function block diagram having a plurality of function blocks, wherein the function blocks each have one or more inputs, the method comprising:

determining input data availability for the inputs of the plurality of function blocks;

generating an execution order for the function block diagram according to the input data availability for the inputs of the plurality of function blocks in the function block diagram; and

generating a control routine from the function block diagram according to the execution order.

14. The method of claim 13, wherein determining input data availability for the inputs of the plurality of function blocks comprises:

determining that a feedback loop exists in the function block diagram; and

assuming data availability for function blocks in the feedback loop.

15. The method of claim 14, wherein determining that a feedback loop exists in the function block diagram comprises determining whether a localized feedback wire is associated with a function block input in the feedback loop, and wherein assuming data availability for function blocks in the feedback loop comprises assuming data availability for the function block input associated with the localized feedback wire.

16. The method of claim 15, further comprising determining whether an unspecified feedback loop exists in the function block diagram, and generating an error if an unspecified feedback loop exists in the function block diagram.

17. The method of claim 16, wherein determining whether an unspecified feedback loop exists comprises determining that an unspecified feedback loop exists if no localized feedback wire exists in the feedback loop.

18. The method of claim 17, wherein determining input data availability comprises determining whether an extra localized feedback wire exists in the function block diagram, and generating an error if an extra localized feedback wire exists in the function block diagram.

19. The method of claim 13, wherein generating an execution order for the function block diagram comprises assigning an execution number to each of the plurality of function blocks in the function block diagram.

20. The method of claim 19, wherein the function block diagram comprises an association between an input of a first function block and a second function block, and wherein determining data availability for the plurality of function blocks comprises determining that data is available for the input of the first function block if an execution order number has been assigned to the second function block.

21. The method of claim 13, wherein determining input data availability for the inputs of the plurality of function blocks comprises assuming data availability for a first input of a first function block if the first input is associated with an input reference.

22. The method of claim 21, wherein generating an execution order for the function block diagram comprises assigning an execution number to each of the plurality of function blocks in the function block diagram.

23. The method of claim 22, wherein the function block diagram comprises an association between the first input of the first function block and a second function block, and wherein determining data availability for the plurality of function blocks comprises determining that data is available for the first input of the first function block if an execution order number has been assigned to the second function block.

24. The method of claim 22, wherein assigning an execution number to each of the plurality of function blocks comprises assigning a next available execution order

number to the first function block if data is available for all inputs of the first function block.

25. A controller configuration system for generating a control routine from a function block diagram having a plurality of function blocks, wherein the function blocks each have one or more inputs, the system comprising:

an execution order generator component adapted to determine input data availability for the inputs of the plurality of function blocks, and to generate an execution order for the function block diagram according to the input data availability for the inputs of the plurality of function blocks; and

a compiler component adapted to generate a control routine from the function block diagram according to the execution order.

26. An execution order generator for generating an execution order for a function block diagram having a plurality of function blocks, wherein the function blocks each have one or more inputs, the execution order generator comprising:

means for determining input data availability for the inputs of the plurality of function blocks; and

means for generating an execution order for the function block diagram according to the input data availability for the inputs of the plurality of function blocks in the function block diagram.